

XVI. Bowed String Instruments

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Preliminary Note

The techniques and special playing modes needed to produce particular forms of articulation and other effects on bowed string instruments are so numerous that most of them are better expressed verbally than by means of new notational devices.

It is for this practical reason that signs meant to convey specific playing techniques have been kept to a minimum.*

*For an excellent, detailed discussion of such techniques and their notation, see *Orchestration* by Walter Piston (New York: W. W. Norton, 1955), Chapter I: Stringed Instruments.

Abbreviations

col legno battuto	clb	ordinario	ord.
col legno tratto	clt	pizzicato	pizz.
divisi	div.	sul ponticello	s.p.
non divisi	non div.	sul tasto	s.t.
normale	norm.		

Body of Instrument

A. Tapping or Striking

If occasional tappings, etc., are wanted, they should be notated with x-shaped note-heads on an extra line below the staff:



An indication should be added whether to use knuckles, fingertips, or fingernails. (There are no abbreviations or pictograms in general use.)

If percussion beaters are to be employed, pictograms should be used (see Percussion, Pictograms, page 210 ff). Explanations of the pictograms must be added on first occurrence because string players are less familiar with them than percussion players.

If a specific location on the instrument is to be tapped, verbal instructions must be provided. If several places are to be tapped, it is advisable to notate such passages in tablature and add a drawing to show the desired locations, as explained below.

B. Tablature Notation

The number of lines of the tablature staff depends on the number of spots on the instrument that are to be struck, etc. The following example has a four-line staff, with the spots labeled A through D, and a drawing which shows where the spots are located on the instrument(s). Furthermore, the spots are divided between the left and the right hand. (If other media for sound production are wanted, such as the wood of the bow or a drumstick, they must of course be specified.)

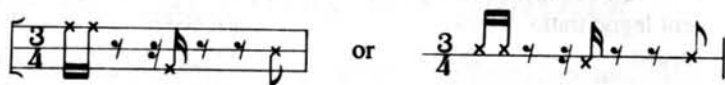
Since all sounds produced in this fashion are short, only relatively short note-values should be used unless, as in the example, there is a tremolo.



Other tablatures are also possible, such as the following:

Strike with bow

Top of Bridge
Behind Bridge
Tail Piece



For further details, see *Bowing behind the Bridge*, below.

Bridge

A. Bowing behind the Bridge

The sign of a curved "bridge" should be used, regardless of the notational method employed (see below). The note-heads should be x-shaped.

1. ORDINARY FIVE-LINE-STAFF NOTATION

The stems must be fairly long, especially those with flags, to provide enough space outside the staff for the bridge symbol to be clearly visible:



If several consecutive notes are to be bowed behind the bridge, a broken continuation line may be used:



2. TABLATURE NOTATION

The lines of the tablature staff, to be used only for extended passages or entire movements, represent the strings of an instrument, rather than consecutive pitches as in the ordinary five-line staff. The top line represents the highest string. It is recommended to label the strings at the beginning of each staff.

Note that the lines of a tablature or string staff must be drawn farther apart than those of an ordinary staff, so that the two kinds of staves are clearly distinguishable, especially when alternating.

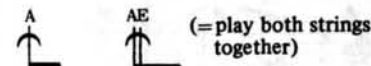


3. NONSTAFF NOTATION

Since pitches are unpredictable and, in a way, almost immaterial in behind-the-bridge bowing, the staff may be omitted. This notation has greater visual immediacy because the lines representing the strings can be run across the bridge symbol. The method is best suited for use in spatial notation, because it requires no note-heads; the durations are expressed by the length of the beams.

The strings may be labeled. If they are not, the choice is left to the performer.

With labeled strings



With unlabeled strings



B. Bowing on Top of the Bridge

For details, see *Bowing behind the Bridge* above.

Observe that the bridge symbol differs somewhat from that for bowing behind the bridge.

The pitch is indeterminate, although the sound changes from string to string. Fingering does not affect it.



N.B.: This notation must not be confused with *ponticello* playing, which actually means next to the bridge, rather than on top of it.

Chords

Solo players break a chord as they see fit. If, however, a specific break is wanted, square brackets should precede the chord to show which of the tones are to be played as double stops:



Individual orchestra players customarily do not play all the notes of a chord unless specifically instructed. Instead, the outside players of a desk play the upper note(s); the inside players the lower one(s).

If no double stops are wanted, the chord(s) must be marked *div. a 3* or *div. a 4*, respectively, followed by *non div.*

If the chords are to be broken, one tone after another without double stops, an arpeggio sign may be used (see Arpeggio, page 3 f), but it is best to write out such effects. Arpeggio chords occur chiefly in solo parts, but a continuous up and down arpeggio may also occur in a section, in which case it, too, is best written out. If such passages are fairly long, the initial written-out arpeggios may be followed by regularly notated arpeggio chords marked *etc. sim.*



The double-arpeggio signs may also be omitted, since *etc. sim.* should be sufficiently explicit.

Damping (*Étouffer*)

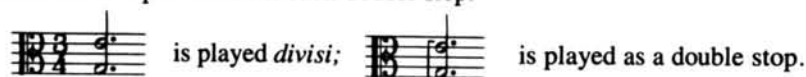
Damping the string(s) after playing (unlike muffling while playing—see Muffling, page 312):



Double Stops

What was said in the section on Chords, above, also applies here: individual orchestra players usually play a double stop *divisi* (divided), the outside players of a section playing the upper note; the inside players, the lower one.

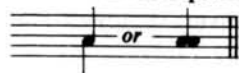
If double stops are wanted (i.e., all players playing both notes), a square bracket should precede each such double stop:



Prolonged passages should be marked *non div.* or *div.*, respectively:



Unison double stops (playing the same pitch on two strings) are identified either with double stems or with double notes. Both notations are acceptable, but they should not be mixed in the same composition:



Fingering without Bowing

Specified pitches

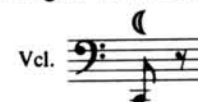


Random or approximate pitches



Fingernail Flick

Flick the right-hand thumb from the second finger, or the second finger from the thumb, so that the nail will strike a string:



An explanatory note on first occurrence should be given.

Harmonics

A. In Scores

All harmonics, whether natural or artificial, should be notated at sounding pitch, topped by a small harmonics circle. (A zero should not be used, since it denotes an open string rather than a harmonic.)



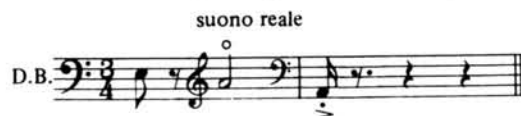
To avoid confusion, it is advisable to mention at the beginning of a composition that all harmonics are notated at sounding pitch.

The notation of natural harmonics usually does not indicate the string on which to play the harmonic, nor where to touch it to produce the desired pitch. These details are generally left to the player. If a specific string is wanted, however, it should be indicated either by its roman numeral (counting from the highest string down) or by *sul D*, *sul A*, etc.

If it is found desirable to include the tablature notation for artificial harmonics (for example, as a guide for the copyist extracting parts, or if the score is to be used for playing), the tablature notes should be added; where applicable, with small note-heads and in parentheses:



Double-bass harmonics are occasionally notated at sounding pitch, in G-clef, even though the regular notes are notated one octave above actual sound. If this is done, the words *actual pitch* (or *suono reale* for international convenience) must be placed at each occurrence, or a general footnote put at the beginning of the score:



B. In Parts

Natural harmonics should be notated as in the score.

Artificial harmonics should be notated in tablature (full size) and the sounding pitches with small note-heads in parentheses, either above the tablature or immediately behind it, as space permits. (Note that the diamond-shaped note-heads of the tablature are *always* open.)



Double-bass harmonics must be notated at the same pitch as the regular notes. The sounding pitches of tablature notation are best omitted because they are usually too high for proper bass-clef notation and thus too cumbersome to accommodate.

Muffling

Bowing on one or two open strings while the left hand muffles them (without creating harmonics!):



(Compare the use of the same sign in Damping, page 310, where the strings are muffled after having been played.)

Pizzicato

A. Bartók or Snap Pizzicato

The string is plucked straight up from the fingerboard, between two fingers, so that it snaps back sharply:



B. Buzz Pizzicato

The string must rebound and vibrate against the fingernail. (buzz pizz.)




To assure proper execution, verbal instructions should be added on first occurrence.

C. Fingernail Pizzicato

The string is plucked with a fingernail:



The fingernail symbol may also be drawn: 

D. Left-Hand Pizzicato



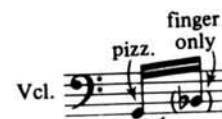
In combination with bowed notes, the cross must appear at the note to be plucked:



N.B.: The plus sign (+) is so well established as the sign for left-hand pizzicato in string notation that it would be unwise to change it even though it is also used as the sign for muting, especially in horn notation.

E. Pizz./Finger

Pluck the first note; finger the second note without plucking:



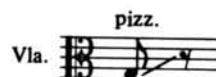
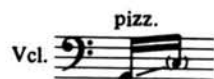
(The second note is full size, unlike the second note in pizzicato glissando.)
An explanatory note must be provided on first occurrence.

F. Pizzicato Glissando

Pluck the first note; immediately begin to slide the left-hand finger to the indicated pitch (small note) or, in the second example, to a higher pitch ad lib.:

Specified final pitch and duration

Free



(The second note is small, unlike the second note in pizz./finger.)

G. Strumming (Fast Arpeggio)

If a chord is marked *pizz.*, the player understands that the chord is to be strummed (arpeggiated) from the bottom up. If the chord is to be strummed downward, a small downward arrow should be placed above it.

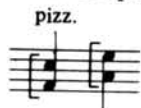
If a fast succession of the same chord is to be strummed, the player will arpeggiate it up and down. Small arrows may, however, be placed above the chords to assure proper execution:



See also Arpeggio, page 3.

H. Two-Finger Pizzicato

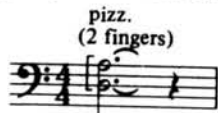
If two strings are to be plucked simultaneously, precede the notes with a square bracket:



This playing mode is best suited for cellos and basses, as in the following example:



N.B.: It is advisable to add the verbal instruction *2 fingers* in orchestral parts. For solo players, the bracket should prove sufficient. (See also Double Stops, page 310.)



Slapping the Strings

A verbal instruction, such as *slap with palm of hand*, must be added on first occurrence:

With specified pitches

With unspecified pitches



This effect requires that the hand bounce off the strings immediately, or they will not reverberate.

Because of the need for very short slaps, no long note-values are involved, and thus no need for white "note-heads" to express half and whole notes. It is suggested that only flagged notes with rests be used.

If the hand is to remain on the strings after slapping them, no pitches need to be indicated, since different fingerings will not affect the sound. A verbal instruction (*strike strings with palm*) and notes with x-shaped note-heads, placed above the staff, should be used:

strike strings w.
palm of hand



Tailpiece

To indicate bowing on the tailpiece, draw wedges through the stems. The note-heads should be x-shaped and placed either on a single line, or on a separate line below the staff, with the stems extending above the staff.

Single-line notation

Staff notation

